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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/652,202

09/02/2003

Yo Yanagida

06753.0562

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22852

7590

08/29/2006

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EXAMINER

LEE, BENJAMIN C

ART UNIT

PAPER NUMBER

2612

DATE MAILED: 08/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/652,202	<b>Applicant(s)</b> YANAGIDA ET AL.	
	<b>Examiner</b> Benjamin C. Lee	<b>Art Unit</b> 2612	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/10/06 has been entered.

***Claim Status***

2. Claims 1-9 are pending.

***Claim Rejections - 35 USC § 103***

3. Claims 1-3 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama et al. (US pat. #6,842,108) in view of Kudo Hiroyuki (JP8-98277).

1) Regarding claim 1:

Akiyama et al. discloses a power line communication device for a vehicle, comprising: an internal electronic control unit (8) connected to a connection point on a direct-current power line (5), the internal electronic control unit (8) communicating with an external electronic control unit (7, 9) by a communication signal superimposed on a direct-current supply voltage applied to the direct-current power line (col. 4, lines 7-22); and an impedance element (11 of Fig. 2) configured to conduct a direct current, wherein the impedance element has a higher impedance against a current component other than a direct current component (filter 11 according to col. 5, lines 30-35 "filters" or impedes/blocks communication signal frequency current components, i.e. other than a direct current component, while allowing or asserting lower impedance against the

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power supply voltage/current, which in this case of vehicle powerline power supply is direct current component).

While Akiyama et al. discloses a door ECU 9 for receiving communication signals over the vehicle power line 5 to control the external load in the form of the door locking/unlocking mechanism and receiving low-pass filtered (11) and regulated (13) power for powering the ECU 9 (Fig. 2 and col. 5, lines 5-50) that is inherently in proximity of the door locking/unlocking mechanism without specifying that the filtered or regulated power also powers the nearby door locking/unlocking mechanism, Hiroyuki teaches the specific known use of a load control by signal-over-powerline arrangement in which the filtered (12) power from the power line (1) powers the controlled load (4).

In view of the teachings by Akiyama et al. and Hiroyuki, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to provide power to the door locking/unlocking external load from the vehicle power line 5 after being isolated by LPF 11 or after the voltage regulator 13 in Fig. 2, depending on the voltage requirement, in Akiyama et al. using the teaching of Hiroyuki so that a separate vehicle power cable 5 is not required to power such external load. As such, the impedance element 11 would be inserted between the connection point and the external load (see Fig. 1 of Hiroyuki).

Furthermore,

2) Regarding claims 2-3 and 5-6, Akiyama et al. and Hiroyuki render obvious all of the claimed subject matter as in claim 1, including:

--the claimed the impedance element comprises a coil connected in parallel with a capacitor (L1, C4 of Hiroyuki in Fig. 1); the claimed wherein the impedance element is

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configured to have higher impedance against non-direct current than against direct current (L1 in Fig. 1 of Hiroyuki); wherein the impedance element consists essentially of one or more coils connected in series between the connection point and the external load (L1 in Fig. 1 of Hiroyuki), and additionally with one or more capacitors connected in parallel with the coils (C4 in Fig. 1 of Hiroyuki), whereby the capacitors are grounded (C4 in Fig. 1 of Hiroyuki shown connected to ground electrode of power line 1).

While Akiyama et al. teaches integrating the components in Fig. 2 onto an IC 9a for compact housing in a vehicle environment in such a way that an active filter using operational amplifier is used instead of an inductance element to implement Low Pass Filter 11 (col. 7, lines 44-48 and col. 2, lines 4-12), it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that application environments such as door locking/unlocking and control mechanisms which is usually in the vehicle door does not require such stringent compact housing restrictions as to necessitate integration on a IC in Akiyama et al., so that a known inductance element implemented filter as taught by Hiroyauki can be used as an alternative.

3) Regarding claim 9, Akiyama et al. and Hiroyuki render obvious all of the claimed subject matter as in claim 1, including:

--the claimed wherein the impedance element is further connected in series with an external power line communication device (regulated power 13 feeding the external communication device in Fig. 2 of Akiyama et al.).

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama et la. (US pat. #6,842,108) in view of Kudo Hiroyuki and Buda (US pat. #6,549,120).

1) Regarding claim 4, Akiyama et al. and Hiroyuki render obvious all of the claimed subject matter as in claim 1:

While Akiyama et al. discloses using Frequency Hopping modulation onto the DC vehicle power line for communication and not the claimed amplitude-shift-key modulation (ASK), it has been well known that various modulation methods can be used on a power line to communication purposes, as long as the communication signals can be distinguished or supposed and extracted from the power line, and de Buda is one such example (col. 2, line 13 and col. 11, lines 30-33).

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use ASK as shown by de Buda in a vehicle DC-power line communication system such as taught by Akiyama et al. and Hiroyuki as an alternative choice based on various factors such as preference or compliance with existing system components or equipment without unexpected results.

#### ***Response to Arguments***

5. Applicant's arguments filed 6/26/06 have been fully considered but they are not persuasive.

1) Applicant's arguments filed on 6/26/06 in response to the Final Office action mailed 3/29/06 regarding matters other than the newly entered amendment (which are addressed in the above rejection) have already been addressed in the Advisory action mailed 7/25/06.

#### ***Conclusion***

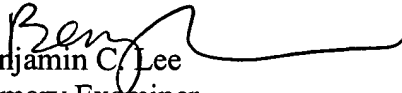
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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin C. Lee whose telephone number is (571) 272-2963.

The examiner can normally be reached on Mon -Thu 9:00Am-5:30Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Benjamin C. Lee  
Primary Examiner  
Art Unit 2612

B.L.